0051835

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

99-EAP-515

SEP 30 1999

Ms. Valarie Peery, Librarian
Nuclear Waste Program
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336

Dear Ms. Peery:

TRANSMITTAL OF THE HANFORD WASTE VITRIFICATION PLANT RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PART A PERMIT APPLICATION, FORM 3 (REVISION 6) (TSD: TS-2-5)

Enclosed is Revision 6 of the Hanford Waste Vitrification Plant (HWVP) RCRA Part A Permit Application (Part A), Form 3. This Part A, Form 3, Revision 6, has been prepared to address the deletion of Process Code "S01" (Storage-Container), process design capacity, and estimated annual quantity of waste for container storage of vitrified high-level mixed waste. The HWVP process code, process design capacity, and estimated annual quantity of waste for container storage have been moved to the IHLW Part A, Form 3, Revision 0, transmitted to the State of Washington Department of Ecology (Ecology) on June 28, 1999.

In addition, this Part A, Form 3 revision reflects discussions held with Ecology pertaining to transfer of RCRA permitting documentation from the Project Hanford Management Contractor, Fluor Daniel Hanford, Inc. (FDH), to the River Protection Project Contractor, Lockheed Martin Hanford Corporation (LMHC). Beginning October 1, 1999, neither LMHC nor FDH will have management responsibility for the HWVP. Therefore, DOE will assume responsibility for the HWVP unit until such time that a revised Part A, Form 3 identifying a co-operator is submitted, or until the processes and capacities of this unit are incorporated into other Part A, Form 3 permit application documents. This approach was discussed with members of your staff during meetings held on September 1, 1999, and September 14, 1999, and in a letter transmitted to you on September 21, 1999.

SEP 30 1999

If you have any questions or concerns, please contact Clifford E. Clark at (509) 376-9333 or Tony C. McKarns at (509) 376-8981.

Sincerely,

James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division

EAP:EMM

Enclosure:
HWVP Part A, Form 3 (Rev. 6)

cc w/encl:
Administrative Record, H6-08
HF Operating Record, H6-08
Ecology NWP Kennewick Library
J. R. Wilkinson, CTUIR
L. J. Cusack, Ecology
L. E. Ruud, Ecology
A. Valero, Ecology
J. J. Wallace, Ecology
M. A. Wilson, Ecology
D. R. Sherwood, EPA
W. D. Adair, FDH
S. M. Price, FDH
S. A. Thompson, FDH
B. G. Erlandson, LMHC
Environmental Portal, LMSI
P. Sobotta, NPT
R. Jim, YN

Please print or type in the unshaded areas only
(fill- in areas are spaced for elite type, i.e., 12 character/inch).

FORM **3**

DANGEROUS WASTE PERMIT APPLICATION

1. EPA/STATE I.D. NUMBER: W A 7 8 9 0 0 0 8 9 6 7

FOR OFFICIAL USE ONLY

APPLICATION APROVED	DATE RECEIVED *(mo., day, & yr.)*	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA/STATE I.D. Number, or if this is a revised application, enter your facility's EPA/STATE I.D. Number in Section I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

☐ 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

MO.	DAY	YR.
03	22	43

* FOR EXISTING FACILITIES, PROVIDE THE DATE *(mo., day, & yr.)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*
* The date construction of the Hanford Facility commenced.

☐ 2. NEW FACILITY *(Complete item below.)*

MO.	DAY	YR.

FOR NEW FACILITIES, PROVIDE THE DATE, *(mo., day, & yr.)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *9place an "X" below and complete Section I above)*

☒ 1. FACILITY HAS AN INTERIM STATUS PERMIT

☒ 2. FACILITY HAS A FINAL PERMIT

III. PROCESSES – CODES AND CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the codes(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the *(Section III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.

2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER (barrel, drum, etc.)	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D80	GALLONS OR LITERS
LANDFILL	D81	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D82	*ACRES OR HECTARES*
OCEAN DISPOSAL	D83	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D84	GALLONS OR LITERS

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided: Section III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G
LITERS	L
CUBIC YARDS	Y
CUBIC METERS	C
GALLONS PER DAY	U

UNIT OF MEASURE	UNIT OF MEASURE CODE
LITERS PER DAY	V
TONS PER HOUR	D
METRIC TONS PER HOUR	W
GALLONS PER HOUR	E
LITERS PER HOUR	H

UNIT OF MEASURE	UNIT OF MEASURE CODE
ACRE-FEET	A
HECTARE-METER	F
ACRES	B
HECATRES	Q

EXAMPLE FOR COMPLETING SECTION III *(shown in line numbers X-1 and X-2 below): A facility has two storage tanks; one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.*

LINE NUMBER	A. PROCESS CODE *(from list above)*	B. PROCESS DESIGN CAPACITY 1. AMOUNT *(specify)*	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE *(enter code)*	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE *(from list above)*	B. PROCESS DESIGN CAPACITY 1. AMOUNT *(specify)*	B. PROCESS DESIGN CAPACITY 2. UNIT OF MEASURE *(enter code)*	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5	T01	66,616	V	
X-2	T 0 3	20	E		6	S02	696,440	L	
1	T01	33,038	V		7	T01	417	V	
2	T04	250**	H		8	S02	431,490	L	
3	S02	416,350	L		9				
4	S99	2,271**	L		10				

**-Process codes T04 and S99 are being used to designate the Hanford Waste Vitrification Plant Melter as a "miscellaneous unit" per Washington Administrative Code 173-303-680 "Miscellaneous Units".

Continued from the front.

III. PROCESSES (continued)

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESS (code "TO4"). FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

Refer to following page.

IV. DESCRIPTION OF DANGEROUS WASTES

A. DANGEROUS WASTE NUMBER – Enter the four digit number from Chapter 173-303 WAC for each listed dangerous waste you will handle. If you handle dangerous wastes which are not listed in Chapter 173-303 WAC, enter the four digit number(s) that describes the characteristics and/or the toxic contaminants of those dangerous wastes.

B. ESTIMATED ANNUAL QUANTITY - For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non-listed waste(s) that will be handled which possess that characteristic or contaminant.

C. UNIT OF MEASURE - For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. PROCESSES

1. PROCESS CODES:

For listed dangerous waste: For each listed dangerous waste entered in column A select the code(s) from the list of process codes contained in Section III to indicate how the waste will be stored, treated, and/or disposed of at the facility.

For non-listed dangerous wastes: For each characteristic or toxic contaminant entered in Column A, select the code(s) from the list of process codes contained in Section III to indicate all the processes that will be used to store, treat, and/or dispose of all the non-listed dangerous wastes that possess that characteristic or toxic contaminant.

Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code(s).

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: DANGEROUS WASTES DESCRIBED BY MORE THAN ONE DANGEROUS WASTE NUMBER - Dangerous wastes that can be described by more than one Waste Number shall be described on the form as follows:

1. Select one of the Dangerous Waste Numbers and enter it in column A. On the same line complete columns B, C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.

2. In column A of the next line enter the other Dangerous Waste Number that can be used to describe the waste. In column D(2) on that line enter "Included with above" and make no other entries on that line.

3. Repeat step 2 for each other Dangerous Waste Number that can be used to describe the dangerous waste.

EXAMPLE FOR COMPLETING SECTION IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* - A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non-listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. DANGEROUS WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (if a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2			T 0 3 D 8 0	Included with above

CONTINUE ON PAGE 3

FORM 3 DANGEROUS WASTE PERMIT APPLICATION
U.S. ENVIRONMENTAL PROTECTION AGENCY/STATE IDENTIFICATION NUMBER
WA7890008967

Section III.C. Description of Process Codes Listed in Section III.A

T01, T04, S02, S99 (Vitrification and Related Treatment and Storage Processes)

The Hanford Waste vitrification Plant (HWVP) is proposed to be located in the 200 East Area of the Hanford Facility[1]. At the HWVP, mixed waste received from a pretreatment unit will be treated in a series of tanks. Treatment will include concentration by evaporation, adjustment with chemicals and glass forming materials, and immobilization in borosilicate glass (vitrification) (T01, T04)[2]. The vitrified waste will be cast into stainless steel canisters and stored at the HWVP until the canisters are shipped to a national repository. The HWVP Melter is designed to process 250 liters per hour of melter feed, producing 100 kilograms per hour of borosilicate glass. The associated HWVP treatment tanks will be designed to process 33,308 liters per day of mixed waste. The dangerous waste treatment tanks will be capable of storing dangerous waste (S02) under offnormal conditions. The HWVP Melter also will be capable of storing dangerous waste (S99)[2] under offnormal conditions. The total storage capacity of the tanks included in the vitrification process is 416,350 liters. The storage capacity of the HWVP Melter is 2,271 liters.

T01, S02 (Tank Treatment and Storage of Secondary Mixed Waste)

Secondary liquid mixed waste generated by the HWVP will be collected and treated (T01) in a series of tanks. Treatment will include neutralization, filtration, sorption, and evaporation. The high-activity fraction from the waste treatment process will be recycled. The remainder of the waste will be transferred to the Double-Shell Tank (DST) System. Treatment design capacity will be 66,616 liters per day of mixed waste. The dangerous waste treatment tanks also will be capable of storing dangerous waste (S02) under offnormal conditions. The total storage capacity of tanks handling secondary liquid mixed waste is 696,440 liters.

T01, S02 (Neutralization, solar Evaporation, and Tank Storage of Secondary Nonradioactive Dangerous Waste

Secondary nonradioactive dangerous waste generated from leaks, spills, and/or overflows from chemical storage, makeup, and feed tanks will be collected, treated in a series of tanks (T01), and stored (S02) at the HWVP. Treatment will include neutralization, concentration by solar evaporation, and decomposition of dangerous constituents during storage. Treatment design capacity is 417 liters per day with a storage design capacity of 431,490 liters.

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[1] Per amendment four of the Hanford Federal Facility Consent Order (Tri-Party Agreement), construction of a high-level waste vitrification plant, such as the HWVP, was delayed until the year 2002 to accommodate changes in waste management planning and prioritization. Hot startup of a high-level vitrification plant has been delayed until the year 2009 (Tri-Party Agreement Milestone M-51-03).

[2] The HWVP Melter, to be used for treatment (vitrification) (T04) and storage (S99) of dangerous waste, will be considered a 'miscellaneous unit' per Washington Administrative Code (WAC) 173-303-680, "Miscellaneous Units".

Continued from page 2.
NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

I. D. NUMBER *(entered from page 1)*: WA7890008967

IV. DESCRIPTION OF DANGEROUS WASTES (continued)

LINE NO.	A. DANGEROUS WASTE NO. *(enter code)*	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE *(enter code)*	D. PROCESSES 1. PROCESS CODES *(enter)*				D. PROCESSES 2. PROCESS DESCRIPTION *(if a code is not entered in D(1))*
1	D002	12,439,660	K	T01	T04	S02	S99	Treatment-Tank/Treatment-Other Miscellaneous Unit
2	D004							Storage-Tank/Storage-Other Miscellaneous Unit
3	through							
4	D011							
5	WP01							
6	WP02							
7	WT01							
8	F003							
9	F005							Included with above.
10	D002	17,161,200	K	T01	S02			Treatment-Tank/Storage of Secondary Liquid Mixed Waste
11	D004							
12	through							
13	D011							
14	WP01							
15	WP02							
16	WT01							
17	F003							
18	F005							Included with above.
19	D002	149,900	K	T01	S02			Treatment-Tank/Storage of Secondary Liquid Mixed Waste
20	WT01							
21	WT02							Included with above.
22								
23								
24								
25								
26								

Continued from the front.

IV. DESCRIPTION OF DANGEROUS WASTE (continued)

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM SECTION D(1) ON PAGE 3.

The mixed waste that will be treated and stored in stainless steel canisters at the HWVP will consist of existing and future high-activity waste stored in the DST System. The mixed waste will be designated as a dangerous waste due to corrosivity (D002) and the presence of spent nonhalogenated solvents (F003 and F005). The mixed waste also will be designated state-only extremely hazardous waste and/or dangerous waste for toxicity (WT01) and persistent (WP01, WP02).

The secondary liquid mixed waste is expected to be designated dangerous waste due to corrosivity (D002), and to the presence of spent halogenated solvents (F003 and F005). The secondary liquid mixed waste also will be designated state-only waste for persistent (WP01, WP02) and toxicity (WT01, WT02). Treatment is expected to eliminate the extremely hazardous waste designation of the secondary liquid mixed waste before the mixed waste is transferred out of this unit.

The secondary nonradioactive chemical waste that will be treated and stored at the HWVP is expected to be designated dangerous waste due to corrosivity (D002) and state-only waste for toxicity (WT01, WT02). Treatment is expected to eliminate the extremely hazardous waste characteristics designation before treatment and storage in a solar evaporation tank.

When the HWVP Project is underway, a Part A, Form 3, permit application revision could be pursued as required by the dangerous waste regulations to change the dangerous waste number(s) and revise the estimated annual quantity of waste.

V. FACILITY DRAWING Refer to attached drawing(s).

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail)*.

VI. PHOTOGRAPHS Refer to attached photograph(s).

All existing facilities must include photographs *(aerial or ground-level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail)*.

VII. FACILITY GEOGRAPHIC LOCATION This information is provided on the attached drawings and photos.

LATITUDE *(degrees, minutes, & seconds)*	LONGITUDE *(degrees, minutes, & seconds)*

VIII. FACILITY OWNER

☒ A. If the facility owner is also the facility operator as listed in Section VII on Form 1, "General Information," place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. *(area code & no.)*

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME *(print or type)*	SIGNATURE	DATE SIGNED
Keith A. Klein, Manager U.S. Department of Energy Richland Operations Office	Keith A Klein	9/30/99

X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

NAME *(print or type)*	SIGNATURE	DATE SIGNED
SEE ATTACHMENT		

 CONTINUE ON PAGE 5

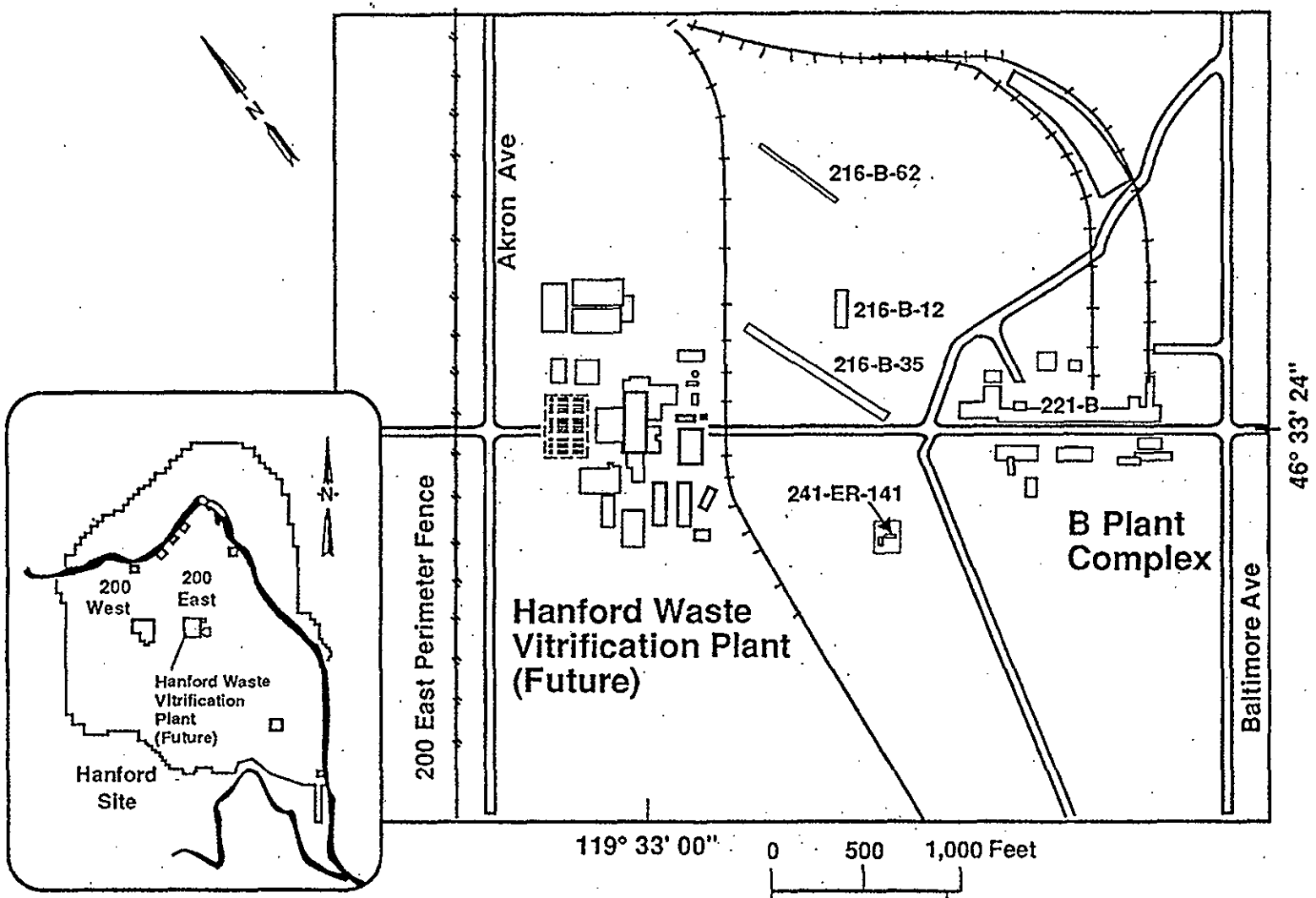
X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Owner/Operator
Keith A. Klein, Manager
U.S. Department of Energy
Richland Operations Office

Date 9/30/99

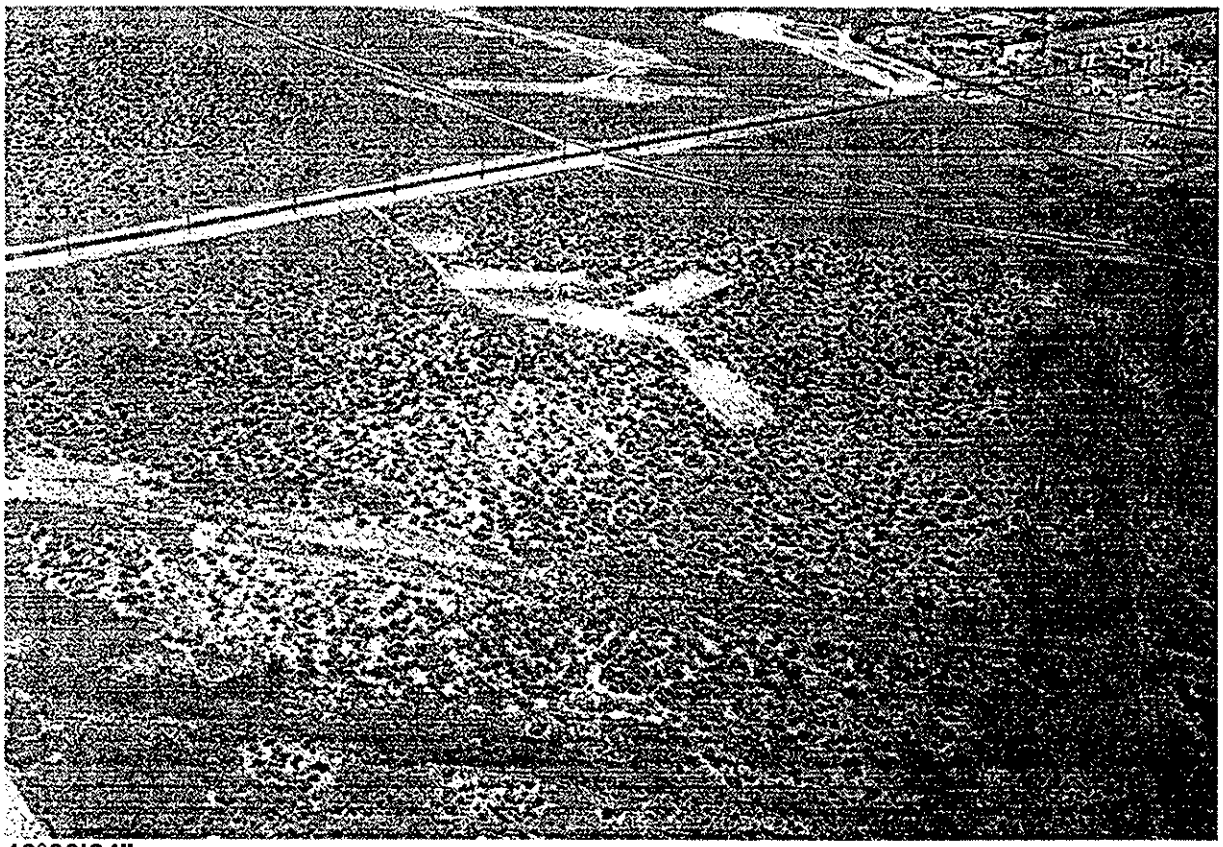
Hanford Waste Vitrification Plant
Future Site Plan



TSD Unit Boundary to be determined at time of construction

H96070161.2

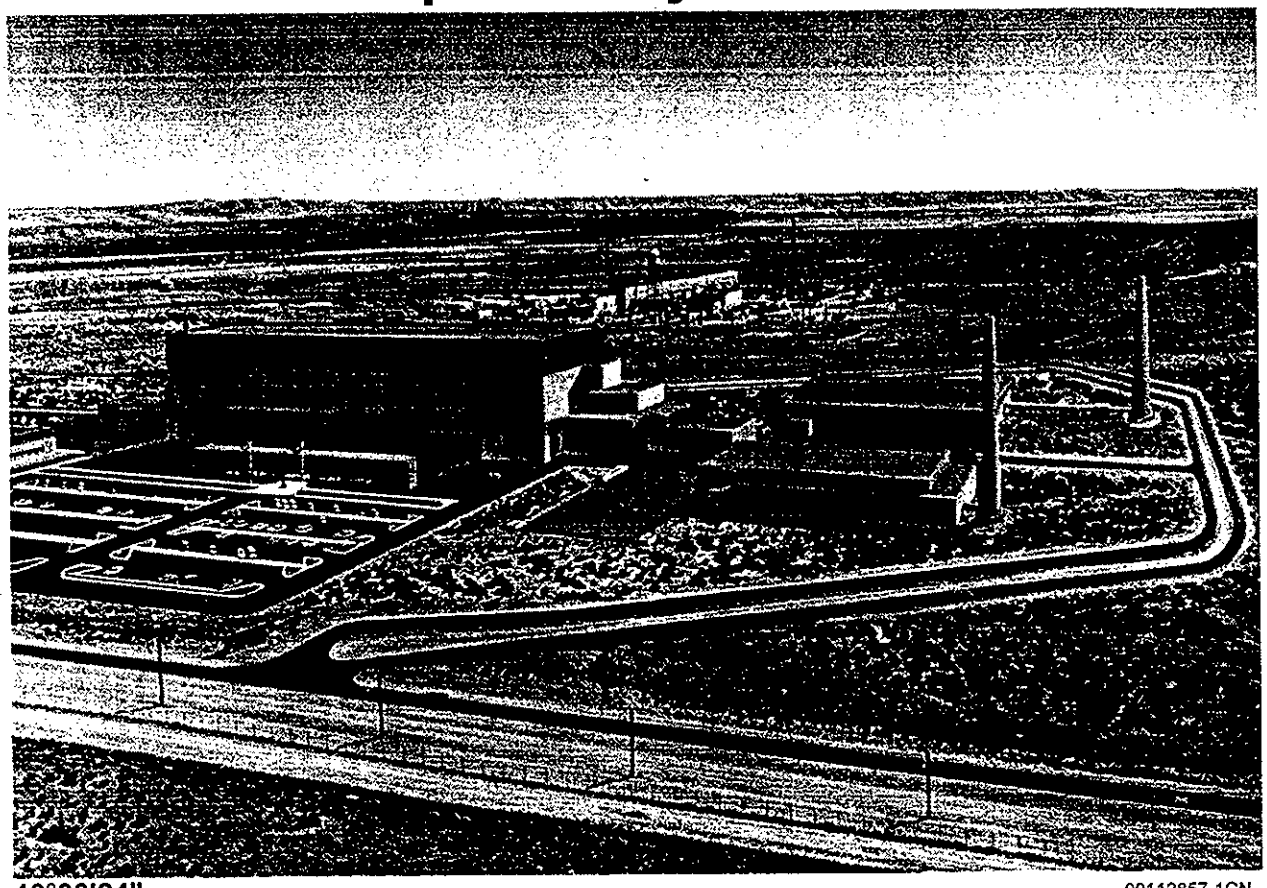
Hanford Waste Vitrification Plant Proposed Location--Aerial View



46°33'24"
119°33'00"

8600906-13CN
(PHOTO TAKEN 1986

Hanford Waste Vitrification Plant
Future Conceptual Layout



46°33'24"
119°33'00"

90112857-1CN
(PHOTO TAKEN 1990)